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AMSAT NEWS SERVICE
ANS-211

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The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, the Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on https://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor [at] amsat.org

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ANS-211 AMSAT News Service Weekly Bulletins

To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE, Suite 1653
Washington, DC 20002

DATE 2023 July 30

2023 AMSAT-UK Colloquium Set for Weekend of October 14th

AMSAT-UK is pleased to announce the 2023 AMSAT-UK Colloquium, scheduled to run alongside the Radio Society of Great Britain (RSGB) Convention at Kents Hill Park Conference Centre in Milton Keynes, United Kingdom on October 14th and 15th, 2023.

The 2023 AMSAT-UK Colloquium will be part of the RSGB Convention and will feature presentations on satellite and space-related topics, continuing the tradition from previous years. Full details of the Colloquium will be made available nearer the time on the AMSAT-UK website (https://amsat-uk.org).

During the 2023 AMSAT-UK Colloquium, the Annual General Meeting of AMSAT-UK will take place, with the calling notice to be issued once the event's program is finalized.

AMSAT-UK will host an AMSAT Gala Dinner at the Marriott Delta Hotel on Trimbold Drive, Kents Hill, Milton Keynes on the evening of Saturday, October 14th. Tickets for the dinner can be purchased online at the AMSAT-UK Online Shop (https://shop.amsat-uk.org) and include a three-course meal with tea and coffee at its conclusion.

AMSAT-UK has reserved a limited number of rooms at the Marriott Delta for the night of October 14th, 2023, including breakfast on Sunday, October 15th. The rooms are available for single occupancy at £84

or double occupancy at £95. Bookings for the Hotel and Gala Dinner can be made through the AMSAT-UK Online Shop.

Interested participants are advised to book early, as the Hotel and Gala Dinner bookings will close on October 1st, 2023, or when sold out.

For access to the AMSAT-UK Colloquium, attendees are required to purchase Day Tickets for the RSGB Convention's Saturday and/or Sunday events. Early bird discounts are available through the RSGB website (https://rsgb.org/main/rsgb-2023-convention/).

The 2023 AMSAT-UK Colloquium will be a gathering of satellite and space enthusiasts, providing an opportunity to learn, network, and explore the latest developments in satellite technology.

[ANS thanks Barry Sankey G7RWY and Dave Johnson G4DPZ, AMSAT-UK Joint Secretaries for the above information]

CubeSat: Celebrating 20 Years of Transforming Space Access

Twenty years ago, an invention emerged from the labs of Cal Poly San Luis Obispo that would change the face of space exploration forever. The CubeSat, a tiny satellite with the dimensions of a square tissue box, revolutionized access to space, making it more affordable and achievable for researchers and students alike.

The brainchild of professors Jordi Puig-Suari and Bob Twiggs, the CubeSat was born out of the need to solve a crucial problem. While universities aimed to train students through hands-on experience, getting their satellites into space was a daunting challenge due to the limited access to rockets and the high costs associated with launches.

The innovative solution was simple yet effective, the CubeSat. They designed a standardized, risk-containment mechanism where all the risk of potential failure would be confined within the small box. This not only addressed the rocket providers' concerns about carrying student-built satellites but also reduced the cost and time required to send satellites into orbit.

The CubeSat's impact was profound and far-reaching. Almost every rocket launched into space today carries CubeSats on board. The small satellite became an open standard, meaning anyone could use it without any charges, promoting uniformity and standardization across the industry.

Unlike traditional satellites that could take years and cost hundreds of millions of dollars to build, CubeSats presented a cost-effective alternative. Building a CubeSat was a fraction of the expense, and the standard's versatility allowed various scientific missions, ranging from Earth observation and mapping to space exploration. The CubeSat opened the doors to space for many countries that launched their first-ever satellites, including Colombia, Switzerland, Hungary, Vietnam, and more.

Private companies also capitalized on the CubeSat revolution, stepping in as intermediaries between satellite creators and rocket providers. Companies like Maverick Space Systems acted as "Uber for satellites," arranging rides for satellites of various sizes, including CubeSats, on rockets for commercial and government clients.

The CubeSat's impact also extended to educational institutions. Cal Poly's CubeSat Lab provided students with hands-on experience, allowing them to design, build, and even launch CubeSats. The educational aspect of CubeSats became so popular that high school students at Grace Brethren High School in Simi Valley also had a class on spacecraft engineering, learning about CubeSats and building AMSAT CubeSat Simulators (CubeSatSim).

The CubeSatSim Project, led by Dr. Alan Johnston, KU2Y, AMSAT Vice President Educational Relations, is an initiative sponsored by AMSAT. It involves the development of a low-cost satellite emulator called CubeSatSim, designed with solar panels, rechargeable batteries, and UHF radio telemetry transmission capabilities. The CubeSatSim features a 3D printed frame and can be expanded with additional sensors and modules. The project aims to provide an accessible platform for educational purposes. Detailed documentation and build instructions are available on the project's Wiki at https://github.com/alanbjohnston/CubeSatSim.

As the CubeSat celebrates its 20th anniversary, it stands as a testament to the power of innovation and the impact of an open standard in transforming an entire industry. What began as a solution to a niche problem has now become an integral part of space exploration, enabling researchers, students, and commercial ventures to access space like never before. The CubeSat's legacy is imprinted in space, as these tiny satellites continue to leave their mark on missions, both in orbit and beyond.

[ANS thanks Michelle Loxton, writing for KCLU, and Dr. Alan Johnston, KU2Y, AMSAT Vice President Educational Relations for the above information]

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13th 04:50-06:35-
19th 06:20~
20th 05:25-07:17-
26th 05:10-06:55-20:00-
27th 06:00-07:50-

* Estimated time indicates the time to start sending commands. Please be aware that it may take some time for the repeater to turn on due to antenna pointing due to the attitude of the satellite, disturbances in the ionosphere, interference, power supply conditions of the satellite, etc.

Fuji 3 has been in an unstable situation for more than a quarter of a century since its launch, as we have already reported. Please use Fuji No. 3 after understanding when using it.

[ANS thanks JARL, the Japan Amateur Radio League, for the above information]

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The scheduled crewmember is Sultan Al Neyadi KI5VTV
The ARISS mentor is ON6TI
Contact is go for: Mon 2023-07-31 08:16:45 UTC

Karasuyama Residents Center, Setagaya, Japan, direct via JA1ZSH
The ISS callsign is presently scheduled to be OR4ISS
The scheduled crewmember is Sultan Al Neyadi KI5VTV
The ARISS mentor is 7M3TJZ
Contact is go for: Thu 2023-08-03 09:26:18 UTC

The crossband repeater continues to be active (145.990 MHz up {PL 67} & 437.800 MHz down). If any crewmember is so inclined, all they have to do is pick up the microphone, raise the volume up, and talk on the crossband repeater. So give a listen, you just never know.

The packet system is also active (145.825 MHz up & down).

As always, if there is an EVA, a docking, or an undocking; the ARISS radios are turned off as part of the safety protocol.

Note, all times are approximate. It is recommended that you do your own orbital prediction or start listening about 10 minutes before the listed time.

The latest information on the operation mode can be found at
https://www.ariss.org/current-status-of-iss-stations.html

The latest list of frequencies in use can be found at https://www.ariss.org/contact-the-iss.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

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Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

+ Small Satellite Conference
August 5-10, 2023
Utah State University, Logan, UT
More information at: https://smallsat.org/

+ Northeast HamXposition and ARRL New England Division Convention
August 25-27, 2023
Best Western Royal Plaza Hotel
Marlboro, MA
https://hamxposition.org/

+ 41st AMSAT Space Symposium & Annual General Meeting
October 20-21, 2023
Sheraton DFW Airport Hotel
4440 W John Carpenter Fwy, Irving, TX 75063

[ANS thanks AMSAT for the above information]

Satellite Shorts From All Over

+ The AMSAT 41st Annual Symposium & Annual Meeting will take place in Dallas/Ft. Worth on October 20-21. Attendees can book rooms at the Sheraton DFW Airport Hotel at a discounted group rate of $137.00 per night for a standard room with a single King bed or two Queen beds. State and local taxes of 15% are not included in the rate. Rooms are available for check-in from October 18 and check-out until October 22. Phone and online reservations are available, and attendees should mention "RADIO AMATEUR SATELLITE" when booking. The hotel is conveniently located at DFW International Airport and offers free parking for attendees. For any inquiries, email info(a)amsat.org. [ANS thanks AMSAT for the above information]

+ The Moonlighter CubeSat has successfully reached its planned low earth orbit in preparation for the upcoming in-space hacking competition, known as the Space Security Challenge: Hack-A-Sat 4. This competition, run by the U.S. Air Force Research Laboratory, aims to enhance security researcher knowledge and skills in securing space systems. The finals of the Hack-A-Sat event will take place in Las Vegas in August, with the winner having a chance to win a cash prize of $50,000. The competition provides an opportunity for hackers, researchers, and space enthusiasts to tackle space systems cyber security challenges. [ANS thanks Alun Williams, writing for ElectronicsWeekly.com, for the above information]

+ On July 23, a SpaceX Falcon 9 rocket launched from Cape Canaveral Space Force Station with 22 additional satellites for the Starlink communications constellation. During the launch, the rocket created a temporary hole in the ionosphere, also known as a rocket exhaust depletion (RED), by releasing exhaust that interacts with charged oxygen atoms, creating a reddish patch. Although the damage is not permanent and mainly affects amateur radio signals, the increasing frequency of such occurrences due to the growing number of satellite launches has raised concerns among scientists about the potential impact on the ozone layer, as rocket exhaust releases various toxic chemicals into the atmosphere. Stricter controls for the launch services industry have been called for to address this issue. [ANS thanks Aditya Madanapalle, writing for News9 Live, for the above information]

+ The preparation for Ariane 6's inaugural flight is going well, as the teams completed a launcher preparation and countdown sequence successfully at Europe's Spaceport in Kourou, French Guiana on 18th July. The test included various critical tasks such as removing the mobile gantry, chilling down fluidic systems, and filling the tanks with liquid hydrogen and liquid oxygen. The launch chronology was also completed up to the ignition of the Vulcain 2.1 engine. During the 26-hour exercise, degraded and contingency modes were tested, demonstrating the launcher and launch base's proper functioning.

Although the ignition of the Vulcain 2.1 engine had to be postponed to a later session, the overall performance of the full launch system was excellent. The teams are confident about the progress of the test campaign and are preparing for a long duration hot firing test in the summer. [ANS thanks the European Space Agency for the above information]

Join AMSAT today at https://launch.amsat.org/

In addition to regular membership, AMSAT offers membership to:

* Societies (a recognized group, clubs or organization).
* Primary and secondary school students are eligible for membership at one-half the standard yearly rate.
* Post-secondary school students enrolled in at least half-time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status.
* Memberships are available for annual and lifetime terms.

Contact info [at] amsat.org for additional membership information.

73 and remember to help Keep Amateur Radio in Space!

This week's ANS Editor, Mitch Ahrenstorff, ADØHJ
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